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ABSTRACT

A study investigated the questioning strategies of teachers engaged in reading instruction of either Anglo children learning to read in English (Anglo teachers) or of Spanish speaking children learning to read in both Spanish and English (bilingual teachers). Three first grade and three third grade Anglo teachers and three first grade and five third grade bilingual teachers were videotaped as they gave regular reading instruction to their students. At the third grade level, two of the bilingual teachers gave instruction in English and three instructed in Spanish. The questioning strategies of the teachers were coded as to (1) direction of question, (2) type of question, (3) content of question, (4) questions asked by the teacher without giving students a chance to respond, (5) student response, and (6) teacher corrections of student responses. The findings showed that there were differences among the teachers' questioning strategies, but that they were not necessarily due to language of instruction. (FL)

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An Investigation of Teachers' Questioning Strategies During Reading Instruction

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INTRODUCTION

Bilingual Education programs, directed to linguistically and culturally different children, have been implemented through Title VII of the Elementary and Secondary Education Act of 1965 for the last ten years. With the advent of these programs, the teaching of initial reading in the pupil's native language or in his second language has become an area of concern. In addition to reading instruction in the child's native language, there are many native English speaking teachers who are responsible for providing the bilingual child (at all levels of English language proficiency) with his initial reading instruction. Classroom research in the area of first and second language is now being conducted. This paper addresses these issues through a small investigation of classroom teachers teaching initial reading to three groups of children.

The initial purpose of this paper was to investigate the questioning strategies of teachers currently engaged in the reading instruction of: Anglo children learning to read in English and Spanish speaking children learning to read both in Spanish and in English. Could question strategies be categorized into styles and types and were there generalizations of style and type that could be identified for each of the three different groups?

A second purpose was to discover if teachers' questioning strategies differed for those children who were learning to read in English as their second language? Was it a) the reading group; b) the teacher's personal style; or c) the language ability of the student; that determined the questioning strategies?

A third and ultimately more important purpose was to develop a coding system in order to attempt to answer the above questions. Thus, the

major objective of the paper was to develop a reliable coding system in order to classify the questioning strategies of teachers within the three groups.

REVIEW OF LITERATURE

Teacher questioning behavior has been one of the more often used topics in classroom research because it is an easy behavior to observe and code reliably. Many studies categorize questions into types or some kind of hierarchy; other studies involve the coding of teacher questions into types which are then related to pupil achievement. It is thought that divergent and complex questions are better than factual questions, but many studies conclude that measures of type or level of questions do not necessarily correlate with learning gains. (Dunkin & Biddle, 1974; Rosenshine & Furst, 1973). Some results have suggested that low-level questions were preferable to more abstract questions (Stallings & Kaskowitz, 1974; Soar, 1973). These latter studies were conducted with low Social Economic Status (SES) children at the primary level where schooling concentrates on the mastery of certain basic skills of reading and mathematics. The present study is involved with this kind of population therefore, these findings more appropriately fit the current study.

Instead of type or level of questions, several studies discuss the frequency of the questions and its relation to learning (Brophy & Evertson, 1976; Stallings & Kaskowitz, 1974; Soar, 1973). Good (1978) suggests two reasons for this relationship. Teachers who are observed as using a high rate of academic questions are the more organized and spend most of their time on well-planned activites as opposed to the disorganized teacher who spends much of his/her time attempting to manage the class. Also, it may mean that there are other activities that involve student initiative where he/she has an opportunity to express himself orally or in writing. In the current study, only reading groups were observed, which are already identified as a specific purpose group; therefore, a concentrated number of ques-

tions would be asked.

The questioning technique is not based on research as much as it is on logical analyses of the question related to the goal (Good, 1978). A complete definition of a "good" question depends on context. In the current study, context is defined as whatever the videotaped teacher perceived as reading, which included either: the teaching of specific reading skills or the oral reading of a story with follow up discussion of that story. Grossier, (1964) lists a criterion for good questions: 1) clear specific--only one question at a time because teachers tend to ask several questions attempting to clarify as they go along; 2) purposeful--the ideal is to plan in advance so that the questions lead somewhere specific as opposed to "off the cuff" type; 3) brief--particularly for younger and lower achieving children who cannot retain long pieces of information; 4) natural and simple language--appropriate for age and achievement level.

Good questioning procedure described by Grossier includes concepts such as: planned sequential time should be given for the student to think about the answer, and that usually, the questions should not be repeated. Also, the practice of alternating between factual and implied questions is not necessarily appropriate for low SES primary aged children, the population of the current study. Good (1978) stated "Factual questions are important especially for young students who learn best if material is highly structured. Many of the questions asked in elementary school classrooms should be factual type questions." (p.367)

Research connecting teaching variables to student effect, for example, achievement or affective growth, has been discussed since 1940; however, the "modern era" began with Flanders in 1957 (Borich, 1977). Flanders developed a system called "Interaction Analysis" that led to the development of many

observation instruments with varying degrees of complexity. Some of the major categories observed were: teaching structuring procedures, teacher questions, teacher responses, warmth and criticism.

Most of these observation instruments have been used to describe teaching in terms of frequencies and percentages of specific events or behaviors. In terms of corelational and experimental studies that have tried to determine a relationship between classroom events and pupil outcomes, there have been relatively few studies. If one looks for a specific teaching behavior such as questioning, the number of studies is fewer. Finally, the specific interest of this writer, that of, teachers' use of questions in a small group reading session with first and third grade children, including the bilingual who is learning to read in English, has not been found to date.

Three studies in particular involve themselves with primary grade reading and mathematics for children from low SES background (Soar, 1973; Stallings & Kaskowitz, 1974; Brophy & Evertson, 1974). Some of the teacher variables studied were: 1) the amount of time spent directly on instruction, 2) the kinds of questions used by the teacher, and 3) adult feedback of both praise and criticism. All of these studies found that there were some consistent elements of small short-step instructional periods directly under the control of the teacher: 1) questions are narrow, direct, and structured to obtain a high percentage of correct answers; 2) teacher provided immediate feedback of praise; 3) little oral discussion of answers occurs; 4) correct answers are followed by another question and incorrect answers are followed by the teacher giving the answer.

One of the most extensive teacher effectiveness studies conducted was the Texas Teacher Effectiveness Project (Brophy & Evertson, 1974 as reported in Borich, 1977). A two-year study was conducted to discover the characteristics associated with success in learning gains. The second and third

grade teachers were carefully selected over a two-year period in order to identify those teachers who proved to be consistent in producing high learning gains for their students. Data were separated by SES level which indicated that different teaching behaviors may be effective for different SES levels. The major findings were that the majority of the teacher characteristics were not significantly related to student learning gains. It was the authors' belief (as reported in Borich, 1977, p. 84) that "teaching is an orchestration of large numbers of different behaviors. There are no magical keys to successful teaching." However, those variables that were found to be relational were: 1) reward and punishment; 2) feedback within the group lessons (reading as an example); 3) the importance of gaining the students' attention before the lesson began; 4) giving the students an opportunity to practice what they were learning. Specifically within the low SES reading groups, word attack clues were important and the behavior of sticking with the same child to elicit an answer were both significant.

A study (Mahaffey, et.al, 1975) that examined teacher effectiveness in both high and low SES classrooms (including reading groups) found effective teacher behaviors were different for each group. Teacher feedback, process questions (those that require more than a factual response) and product questions (those that require a factual response) were specific behaviors examined. Teacher effectiveness was determined by pupil residual student gain scores on specific tests of the Metropolitan Achievement Test Battery. The specific area of interest for the present investigation involved the question strategies of teachers. It was suggested that in the early grade levels, a distinction should be made between "absolute factual questions", for example, "What's the man's name?", and factual questions which can be figured out with some help or there is more than one right answer, for example, "Give me a word that

begins with 'sl'". It was noted that process questions were not used much at the primary age level. This observation concurs with Brophy and Evertson's study (1974) that narrow direct questions have more positive effects on low SES children.

A recent teacher effectiveness study (Ramirez, 1978) identified and isolated certain teacher cognitive behaviors demonstrated during the teaching of Spanish to Spanish speaking children here in the United States. Effectiveness was determined by reading gains on the Inter American Series Test. The teachers who volunteered were picked at random and were given specific reading lessons to teach in two twenty minute periods. The reading groups consisted of Spanish speaking children between the ages of six and twelve who were learning to read in Spanish. Some of the observable cognitive behaviors reported were: modeling, questioning (related or unrelated to text), reading subskills (decoding, vocabulary and grammar), correcting and reinforcement. Two of the behaviors that proved to be positively related to student reading gains in Spanish were: 1) the focus on decoding skills, and 2) asking the student to read sentences out loud. Negative behaviors found were: 1) the use of detailed questioning of text material, and 2) asking students to read entire paragraphs at a time without any break for specific questions or explanation or correction of oral reading miscues.

At present, this investigator has not found any research that deals specifically with the identification or the comparisons of teacher questioning strategies among the three teacher groups within this investigation.

EXPLANATION OF THIS INVESTIGATOR'S ROLE IN THE LARGER STUDY

The larger study

The present study (Rodriguez-Brown, in progress) with which this investigator is involved, attempts to find the effect of different language approaches (native language, second language, or both languages concurrently) in beginning reading instruction. The study includes three parts: Part I looks at the reading achievement of the students across the three different groups along with a group of Anglo children who are at the same grade level; Part II looks at the teacher questioning, answering and correcting strategies within a group reading session; Part III evaluates the reading miscues produced by bilingual vs. Anglo children as they read orally.

The investigator's specific role of study was to assist with the videotaping of the group reading and the individual students' oral reading sessions. I also administered the majority of the posttesting which consisted of scheduling, monitoring, and then hand scoring the tests for 382 children. Reading test data was collected by using the Tests of Reading from Guidance Testing Associates. It was this investigator's responsibility to develop coding systems for both the individual and the group reading sessions; these coding systems were to be used in conjunction with the pre and posttest data as well as with the parent and teacher questionnaires which were used in the larger study.

Teachers

Part II is the specific study which this paper addresses. The entire project involved eighteen teachers of whom sixteen agreed to be video-taped as each taught her regular reading groups. There were 6 Anglo teachers (those who taught Anglo children), and 10 bilingual teachers (those who taught in either Spanish or English to bilingual children). Five

of the bilingual teachers were native speakers of Spanish; five were native English speakers.

In first grade, three Anglo and three bilingual teachers were videotaped. One of the Anglo teachers also taught a group of bilingual children whose English proficiency level was high enough according to the Functional Language Survey, to receive reading instruction in English. The FLS is an instrument developed by the Chicago Board of Education to determine the language proficiency of limited English speaking children.

In the third grade, three Anglo teachers and five bilingual teachers were videotaped. Two bilingual teachers gave reading instruction in English; the other three instructed in Spanish. The Spanish teachers were taped with only one group so no comparisons of style according to language group could be made.

All of the teachers were female and ranged in teaching experience at this level from one to nine years. All schools within the two school districts were racially integrated and received Title I funding.

Videotape procedure

For the videotaping, the teachers were asked to procede with their regular reading program; consequently, the video samples were varied in their contents. Each teacher was recorded with one, two, or three of her reading groups for an average of twenty minutes per session. The collection of data through use of videotape was found not to be distracting to the young students. The equipment was set up in an obscure part of the classroom which allowed the regular routine to continue unobstructed. Most of the teachers (particularly first grade) had prepared their children for the videotaping and after the initial curiosity they setted down and continued their lessons as usual. The original study planned for three video samples for each teacher; but inclement weather and teacher reluc-

tance to be interrupted five times (including pre and post testing) precluded this, and only one visit per teacher was conducted.

Specific questions asked by this investigator

The original study was concerned with not only teacher questioning, but also student answering and the subsequent correcting strategies of the teacher. As the teacher tapes were examined, it was thought that the coding procedure would be too complex for this particular study, therefore it was decided to examine in detail only the questioning strategies of the teacher and students' responses to these questions.

There are many ways in which to ask questions, depending on the students, the subject matter or the purpose of a group session. Perhaps specific question types are more appropriate or more often used by teachers of one groups than another. Because the video samples included three different student populations, there was an increasing interest by the investigator to examine the kinds of questions and questioning strategies used by these three different groups of teachers. Did each group of teachers (monolingual, Spanish/English, or bilingual English) exhibit different strategies? Did bilingual teachers use different strategies when they taught bilingual or monolingual children? One Anglo teacher was taped with both Anglo and bilingual (English) groups so this question could be examined at least at a superficial level. Was it the context of the reading lesson that determined the questioning strategies or was it the teacher's own personal style that determined the kind of question strategies she used? In order to attempt to answer these questions concerning questioning strategies, a coding system had to be devised.

DEVELOPMENT OF CODING SYSTEM

Review of literature

An observation scale can be considered as a continuum ranging from a detailed objective observation to the opposite extreme in which the observation is based on highly subjective inferences. These poles are called low and high inference (Brophy & Evertson, 1974). Low inference involves coding of specific tangible observable behaviors, for example, teacher asking a specific question to a specific student and receiving a specific answer. The coded behaviors are obvious and require little or no inference which can lead to observer agreement. High inference coding, for example, affection, warmth, and organization is more subjective and requires more inferential decisions by the coder. The coder needs to conclude from overt behavior what kind of general comment to make about a teacher's actions. Because this measure is highly subjective, coder reliability is more difficult to achieve. A combination of both high and low inference coding is the most desirable.

Determination of categories and format

First of all, it is important to note that this was the investigator's first attempt to develop a coding system. Many problems arose from this initial experience. An attempt to code a relatively high number of strategies led to logistical difficulties when recording much data on one coding sheet. The purpose of using one coding sheet was to minimize the number of times the coder had to view the videotapes. In contrast, all of the coding systems reviewed for the study utilized a check list form as opposed to recording tallies opposite the transcription of the question and/or response.

The coding system developed for this study was adapted from those of Brophy & Good, (1974); Ramirez, (1978), and Guszak, (1967). The observational system is a low inference type because of its facility for coder reliability and because of the specific nature of teacher questioning investigated. Also, each teacher in the study was videotaped only once which made it prohibitive to determine high inference information.

All of the tapes were viewed by this investigator at least once before an attempt was made to develop a coding system. Because of the diversity of activity within the context of group reading, some generalizations needed to be made. All of the teachers asked many questions regardless of the specific context of the lesson. In order to observe and describe a number of specific questioning strategies of teachers, a series of categories was developed to find: 1) what types of questions did teachers ask; 2) what was their style of questioning, for example, did they call on volunteers or specific students?, did they stay with one student to elicit a correct answer?, and did they ask more than one question before the student had a chance to respond?; 3) what did the teacher do when the student did not answer the question?

Explanation of Code Categories

The initial coding system included nine categories (see Descriptive Outline of Coding Instructions, Appendix A, eight of which pertained to teachers' questioning strategies and one category looked at student responses. The categories are represented on the Coding Evaluation Sheet (see Appendix B for sample) as Columns 1-9. An explanation of each Column follows.

Column 1 (TAPE LOCATION) was used to mark the tape for each transcribed question; this was done to facilitate the procedure of returning to a specific portion of the tape if necessary.

Column 2 (DIRECTION OF QUESTION) has 4 sub categories which were coded as: D-1, Teacher names student before asking question; D-2, Teacher asks question and accepts answer from anyone; D-3, Teacher asks question and calls on volunteer; D-4, Teacher asks question and calls on specific student.

Column 3 (TYPE OF QUESTION) included 8 sub categories. Q-1, Absolute Factual which requires a specific and exact answer from student. Q-2, Factual which requires some figuring out by student and more than one answer is acceptable. Q-3, Yes/No or Two Choice, which requires student to make a choice between only two responses. Q-4, Personal with Text, requires some elaboration of personal experience or requires student to put himself in place of story character. Q-5, Related to Instruction but not Connected with Text. It was found that teachers ask many questions connected with instructional material but answers do not require a factual type response; therefore this category was included. Some examples are "What words will you practice over the weekend?"; "Would you like to take your book home this evening?", etc. Q-6, Non-Academic, question has nothing to do with instructional material and is usually of a procedural or disciplinary nature. Q-7, Evaluation which requires inferences to be made. This is a more sophisticated type question than that of Q-2 and Evaluation is not used as often at the primary level. Q-8 Unintelligible was used if the coder could not determine the type of question because of audio problems with the videotape.

Column 4 (CONTENT OF QUESTION) has 3 sub categories of; A- Decoding Skills; B-Story Detail; C-Story Comprehension. This category was used in conjunction with Column 3 to determine how many of the questions were directly related to reading instruction, per se.

Column 5 TEACHER REPEATS OR REPHRASES QUESTION BEFORE CALLING ON STUDENT.

Column 6 TEACHER ASKS 2 OR MORE DIFFERENT QUESTIONS BEFORE CALLING ON STUDENT.

Column 7 TEACHER STAYS WITH SAME STUDENT TO ELICIT RESPONSE.

Column 8 STUDENT RESPONSE included 4 sub categories: correct or partially correct answer; incorrect answer; no response; reads aloud which was used in conjunction with oral reading activities and a sub category that identifies when student "B" answers question that was directed to student "A"

Column 9 (TEACHER CORRECTIONS) included 4 sub categories: 1-pronunciation; 2- grammar; 3-miscue during oral reading; 4-supplies correct answer for the student. This category was included primarily for the bilingual teacher who taught English reading. How often and under what circumstances (ie. in the middle or the end of a reading passage, as student is attempting to answer a question) does the teacher correct the student?

Intercoder reliability check

After the initial coding system was developed, 2 raters (1 professor of reading and this investigator) went through a training period in order to become familiar with the coding system. The videotape for one teacher was used for this training. At that time questions and interpretations of specific categories were discussed and resolved. Following the training session, each rater independently coded reading groups of four different teachers. See appendix B for sample of coding sheet. The teachers' questions had already been transcribed by this investigator so the raters were able to concentrate on the coding itself; this assured

that the raters were using the same data. A similar process occurred with the Spanish teachers' tapes. Two university professors, both native speakers of Spanish, were the coders for these tapes. Table one shows the intercoder reliability between the two raters for the questioning strategies and the student response category for both the English and Spanish tapes. The Pearson correlation coefficient formula was used to calculate the intercoder reliability for each of the categories.

TABLE I

Intercoder Reliability

Teacher Questioning and Student Response Code during group reading.

Direction of Question	Code	Intercoder Agreement (Pearson r)	
		English Reading	Spanish Reading
T names S before asking ?	D-1	.993	.822
T asks ? accepts answers from anyone	D-2	.995	.983
T asks ? calls on volunteer	D-3	.931	**
T asks ? calls on specific student	D-4	.996	.867
Type of Question			
Absolute Factual	Q-1	.798	.997
Factual	Q-2	.931	.992
Yes/No; Choice	Q-3	.637	.648
Personal with Text	Q-4	**	**
Related to Instruction but not to text	Q-5	.678	*
Non Academic	Q-6	**	**
Evaluation	Q-7	**	**
Unintelligible	Q-8	**	**
Content of Question			
Decoding Skills	A	**	**
Story Detail	B	**	**
Story Comprehension	C	**	**
Teacher Repeating or Rephrasing Question Before Student Answers			
Total	Col 5	.914	.350

	Code	Intercoder Agreement (Pearson r)	
		English Reading	Spanish Reading
Teacher Asks 2 or More Different Questions Before Student has Chance to Answer			
Total	Col 6	**	**
Teacher Stays with Same Student to Ask More than 1 Question			
Total	Col 7	*	.996
Student Response			
Correct	SR+	.927	967
Incorrent	SR-	.681	992
No Response	SR0	.767	944
Teacher Corrections	TC		
Pronunciation	1	**	**
Grammar	2	**	**
Miscue in Oral Reading	3	**	**
Supplies Correct Answer	4	**	**

* Not included in the subsequent analysis because of its very low reliability
** Frequency of behavior was too infrequent.

Results of intercoder reliability check

Table 1 shows the results of the intercoder reliability check. The results will be given for both the English and the Spanish sample. The terms Column and Category were used interchangeably. Some differences in the degree of reliability for each sample were found and they will be mentioned at the appropriate time. Of the original nine general categories only 1 total category in English, DIRECTION OF QUESTION, had a high reliability (r= .931 to r= .996) One sub category, D-3 did not occur in the Spanish data according to the Spanish coders.

Within Category 3, TYPE OF QUESTION, four sub categories: Absolute Factual Q-1; Factual Q-2; Yes/No Q-3; and Related to Instruction but not to Text Q-5; proved to be reliable for both English and Spanish with the exception of the last sub category which did not prove reliable for the Spanish sample.

Column 4, CONTENT OF QUESTION, had a low degree of reliability which will be explained below.

Column 5, TEACHER REPEATING QUESTION BEFORE STUDENT ANSWERS, showed a high reliability (r= .914) for the English sample but not enough data appeared in the Spanish sample to calculate the reliability.

Column 6, TEACHER ASKS 2 OR MORE DIFFERENT QUESTIONS BEFORE STUDENT HAS CHANCE TO ANSWER, did not occur within any of the teacher groups.

Column 7, TEACHER STAYS WITH SAME STUDENT TO ASK MORE THAN ONE QUESTION TO ELICIT RESPONSE, did not show a high reliability with the English sample but the reliability proved to be high for the Spanish sample (r= .996).

Column 8, STUDENT RESPONSE, proved to be reliable for both English and Spanish in the first 3 sub categories of: Correct, Incorrect, and

No Response. The remaining 2 sub categories of: 1) Student B answers for Student A and 2) Unintelligible did not appear enough times to be included in the analysis.

Column 9, TEACHER CORRECTIONS, could not be checked for reliability because of insufficient data in both English and Spanish.

Discussion

The discussion will center on the English reliability check, because of the direct involvement of the investigator in the task. The data analysis for the Spanish sample was completed by two native Spanish speakers (both university professors) while the reliability coefficients were calculated by this investigator. Further discussion with these Spanish raters was not possible due to time constraints.

The following are comments which can be made about the results shown above (see Table 1).

The high reliability shown by categories: DIRECTION OF QUESTION, and TYPE OF QUESTION and STUDENT RESPONSE may have occurred because all of these strategies are visible and objective in nature. The difference in reliability between Q-1 Absolute Factual (r= .798) and Q-2 Factual (r= .931) may not be necessary. The lower reliability for Q-1 may have occurred because one coder designated as Q-1, only those questions that required an exact one or two word answer while the other coder did not make such a fine distinction. As a result, a more detailed explanation of each sub category has been written in the final coding form so that for future use only those questions that require one or two word answers would be coded as Q-1 (see Appendix A for Descriptive Outline of Coding Instructions).

The Q-3 Yes/No type did not show a high reliability (r= .637)

because one rater coded many Q-5, Related to Instruction but not to Text into the Q-3 category. An explanation with specific examples from the transcription was then included under this sub category. The Yes/No sub category presented coding problems because the teacher often asked a question that required yes or no for an answer but the real intent of the question was to elicit specific information. An example of this is "Can you find the answer on this page?" Often, the student would respond with a yes or no which then required the teacher to ask "Where?" This type of question should be coded under Q-1 because the answer requires a specific reply. In terms of teacher questioning strategy, the Yes/No type may not be the most productive because when the student responds in kind, the teacher must follow up with another question.

Within the STUDENT RESPONSE Column the sub category of Incorrect was not as high for English (r= .681) as for Spanish (r= .992) because it was not made clear to the English raters how to code a student's self corrected response. Some of the responses were coded as correct; others were coded as incorrect or both. An explanation of this was added to the coding instruction sheet. An incorrect answer that is self corrected by the student will be coded as correct. The No Response sub category may have been difficult to code because of the subjectivity in determining when enough time had lapsed to code its as No Response. This sub category was sometimes used in addition to Column 5, TEACHER REPEATS OR REPHRASES QUESTION BEFORE STUDENT RESPONSES. A comment about this was included in the coding sheet; if the teacher repeats the same question then do not record a 0 in the No Response Column, but put a check in Column 5.

Category 4, CONTENT OF QUESTION, showed to be too unreliable to be included in the coding system. There may be some reasons for this result. During the training session, no agreement could be reached on the perception of what reading is. Thus, no working definitions of the sub categories: A-Decoding Skills; B-Story Detail; C-Story Comprehension were written. The original purpose of this category was to investigate how many of the teachers' questions were, in fact, directly related to the reading process either in the form of decoding skills or story related discussion. If this coding system were used specifically for a reading study, this category should be clearly defined before any coding is done.

Category 7, TEACHER STAYS WITH ONE STUDENT TO ELICIT RESPONSE, lacked a high reliability because of a procedural difference during the coding. One coder marked this column only at the beginning of a series of questions directed at one student, while the other coder checked Column 7 for each question the teacher asked. This led to a much higher number of occurences for the latter coder. To avoid problems in the future with this particular category, Column 7 should be checked each time the teacher asks a question, even if there are as many as seven questions in a row that are addressed to the same student. The Spanish coders who had benefit of the above information attained a reliability coefficient of r= .996 for this category.

Some changes were made with the original coding sheet as a result of the reliability check; also, for future studies more changes can be made. These will be discussed below.

As a result of the reliability check, some categories were eliminated or it was suggested that they be eliminated. Column 6, TEACHER ASKS 2 OR MORE QUESTIONS BEFORE STUDENT ANSWERS, did not occur except

occasionaly with one Spanish teacher; according to Grossier (1964), this is not good questioning procedure and it appeared that most teachers did not use this strategy.

Within the STUDENT RESPONSE Column the last 2 sub categories of: 1) Student B answers for Student A, and 2) unintelligible were never used so these sub categories may be eliminated from the coding sheet.

The last general category of TEACHER CORRECTIONS was not accounted for except in the 4th sub category, Supplies Correct Answer. In a study which emphasized teacher responses, this category would be very necessary. Also, if all teachers in the study were coded as they conducted similar types of reading groups, for example, oral reading, this category might possibly be more used than it was during this investigation. The major interest and purpose here was to investigate teachers' questioning strategies and this final category was included out of personal interest but teacher corrections was not directly pertinent to the present investigation.

The final version of the coding instruction sheet appears in the appendix (see appendix A). It was hoped that the foregoing corrections and changes would improve the reliability of the coding system for future use.

TABLE 2

% OF EACH CATEGORY USED BY INDIVIDUAL TEACHER (FIRST GRADE)

	QUES*	D-1	D-2	D-3	D-4	Q-1	Q-2	Q-3	Q-4	Q-5	Q-7	Col 5	Col 7	SR **	SR +	SR -	SR 0	TC ***	1	2	3	4
T_1 (E) bilingual	101	54	10	10	09	38	26	08	04	14	03	18	07	77	71	12	17	1	--	--	--	100
Anglo	150	53	01	01	26	72	17	07	--	05	--	08	07	140	61	14	25	8	--	--	--	100
T_2 (E) bilingual	130	25	58	13	04	31	16	03	02	15	02	01	--	130	65	04	30	3	--	--	--	100
Anglo																						
T_3	100	13	37	33	16	38	37	16	01	08	--	02	--	97	78	09	12	1	--	--	--	100
	49	20	12	57	10	22	65	06	02	04	--	02	--	48	92	06	02	1	--	--	--	100
Anglo	47	28	34	28	09	32	43	15	--	09	02	06	--	44	75	14	11	2	--	--	--	100
T_4	65	63	28	03	06	77	03	09	--	11	--	18	--	51	65	12	22	7	14	--	--	86
Anglo	78	47	47	02	04	21	49	28	--	03	--	13	01	64	83	03	13	5	25	--	--	80
T_5	123	36	30	25	09	37	37	14	19	--	--	06	02	115	82	08	10	4	--	--	50	50
Anglo	47	66	20	--	16	32	34	30	--	--	--	06	02	44	70	--	25	6	--	--	83	17
T_6	18	83	17	--	--	83	17	--	--	--	--	06	.22	15	88	06	06	--	--	--	--	--
Spanish Anglo																						
T_7																						
Spanish Latino	84	44	56	--	--	57	17	26	--	--	--	--	06	79	84	11	05	7	14	--	--	86

*Totals appear as numbers
* Number per group
** Number SR
*** Number TC

All other numbers are represented in %
-- Refers to no incidents of this category

TABLE 3

% OF EACH CATEGORY USED BY INDIVIDUAL TEACHER (THIRD GRADE)

	QUES*	D-1	D-2	D-3	D-4	Q-1	Q-2	Q-3	Q-4	Q-5	Q-7	Col 5	Col 7	SR **	SR +	SR -	SR 0	TC ***	1	2	3	4
T_8	103	23	46	24	07	50	30	09	04	06	01	08	05	93	90	06	01	11	09	73	--	18
(E) bilingual Latino	68	62	32	02	04	44	34	21	--	02	--	25	01	52	87	08	06	36	44	22	31	03
T_9	57	89	07	--	04	53	16	25	--	--	07	12	--	50	74	16	10	26	--	--	93	07
(E) bilingual Latino	27	37	52	--	11	67	22	11	--	--	--	04	04	26	88	08	04	7	14	--	71	14
T_{10}	78	55	26	09	10	77	06	15	--	03	--	14	03	74	60	11	26	1	--	--	--	100
Anglo	58	72	10	03	14	67	24	05	--	03	--	05	--	56	89	04	07	--	--	--	--	--
T_{11}	54	50	24	04	22	35	30	28	--	06	--	07	06	50	78	06	16	1	--	--	--	100
	109	39	59	--	03	25	45	23	02	06	--	15	04	88	73	08	14	18	06	--	39	56
Anglo	42	19	64	02	14	19	45	21	07	05	02	17	--	35	86	11	--	5	--	--	40	60
T_{12}	74	23	24	36	16	16	57	07	19	02	--	15	--	63	81	08	06	--	--	--	--	--
Anglo	55	33	36	20	11	67	22	11	--	--	--	09	--	50	76	14	10	4	--	--	--	100
T_{13}	92	38	58	--	04	33	47	14	--	04	--	10	22	91	66	09	25	5	--	--	--	100
Spanish Latino																						

* Totals appear as numbers
  * Number per group
  ** Number SR
  *** Number TC

All other numbers are represented in %
-- Refers to no incidents of this category

Results

The coding system previously described was used to tabulate 7 general categories in order to classify teachers' questioning strategies and their students' responses. Results of an application of the coding system can be found in Tables 2 and 3 which show percent of usage of each category. Explanation of these tables follows. The categories represent questioning strategies used by the teachers in this study. The column headings have been previously explained in detail and can also be found in Table 1 and Appendix A. As a result of the reliability check certain categories were eliminated; therefore they were not included in Tables 2 and 3. The eliminated categories were as follows: Q-6, Q-8, Column 6 and Student Response sub categories: A and U. Some teachers did not utilize certain other strategies. This was represented by the -- sign in Tables 2 and 3. Some of the columns included in Tables 2 and 3 were not proved reliable in either English and/or Spanish (Q-4, Q-7, Col 7 & Teacher Corrections). However, it was felt by this investigator that these particular categories and sub categories were important enough to include in the discussion. The low reliability, in some cases, was due to insufficient data and on coding the remaining 9 teacher videotapes, these categories were shown to appear quite often.

Originally, there were sixteen teachers who agreed to be video taped. Unfortunately, the videotape of one third grade Spanish teacher had too much classroom noise interference which made the coding prohibitive. The remaining 2 Spanish teachers (one first grade and one third grade) were not coded for this particular investigation. These videotapes will be examined and coded in the near future.

Teachers were represented in three ways: 1) T-1, T-2,... which identified the teachers; 2) bilingual, Anglo, or Spanish which

identified the language of the reading group; 3) Anglo or Latino which identified the native background of the teacher. The double sets of lines were used to separate the 3 groups. The first grade teachers' results are represented in Table 2 and results of the third grade teachers are shown in Table 3. Totals for: Questions per reading group, Student Response, and Teacher Corrections are represented in whole numbers. All of the other numbers in Tables 2 and 3 represent a percent of usage by the individual teachers. The terms Column and Category are used interchangeably throughout this study.

According to the teachers, their reading groups were determined by the students' English language proficiency if it was a bilingual reading group and by reading inventories from the reading series used, if the group was an Anglo group. The Spanish teachers were videotaped with one reading group each.

Question 1

The first question of the study asked if questioning strategies could be categorized into styles and types. The coding system was devised in an attempt to answer this. The categories of Direction of Questions, Column 5 and 7 were identified as strategies of style. These 3 categories are involved with the way in which teachers ask questions. To whom do they direct their questions, do they ask more than one question at a time before the student has a chance to answer and do they follow up with the same student in order to elicit a positive response from him. The questions themselves, Category 3, have been sub categorized into 6 types listed in Tables 2 and 3 as Q-1 through Q-5 and Q-7. Q-6 was eliminated from the coding system as explained in the previous section. All of the categories developed can be considered in terms of teacher style of

questioning or the type of question used by the teacher.

The second part of the first question asked if any generalizations of style and type could be made for each of the three teacher groups. In other words, one questioning style, D-3 (Teacher asks question to volunteer) was not used at all by the 3 Spanish teachers. Also, one bilingual teacher and two Anglo teachers were not coded for this category. All of the other Anglo and bilingual teachers used this strategy to some extent. It was noted that D-3 was the least used of the 4 sub categories of directing questions to students.

The Spanish teachers were not coded as using the Q-4 type question which required some elaboration of personal experience from the student. The same bilingual teacher (T-11) and two Anglo teachers also did not use this type of question with their reading groups.

Finally, the Spanish teachers did not use the Q-7 type of question which required that the student made some inferences in order to answer the question. Among the other teachers, bilingual and Anglo, this type of question was used in 6 of 21 reading groups.

There was no category that showed a distinct difference between any two of the three groups. Most of the differences that were coded between any two groups occurred between the Spanish group and either of the other two.

Question 2

The second question proposed in the beginning of the study asked if bilingual teachers used different strategies for their bilingual children than they did for their monolingual groups. Only one sample (T-2 and T-5) was available in this study to attempt to answer this question. T-2 and T-5 are in fact the same teacher with 2 different groups of children,

one bilingual and two Anglo. Results of the coding (see Table 2) show that in certain categories, different strategies are used in different rates for each group of children. This teacher used D-2 style of question direction 58% with the bilingual group and an average of 25% with her Anglo groups. The Q-2 type of question was used an average of 16% with the bilingual group and 35% with the Anglo groups. Q-5 type of question was used 15% with the bilinguals and was never used with the Anglo groups.

Finally, Q-3 type of question was used less (3%) with the bilingual group than with the Anglo groups although differences occurred between the 2 Anglo groups, too (14% and 30%).

It should be pointed out that there was one question type used with both bilingual and Anglo groups. The Q-1 Absolute factual type was used approximately the same amount for bilingual (31%) as for the Anglo groups (37% and 32%).

Part 2 of the second question for the study asked if it was the reading group context or the teacher's individual style which would determine the teacher's questioning strategies. If it were style then it could be shown through application of the coding system that the teacher would use each category approximately the same percentage regardless of the reading group she was teaching. Again, there was only one teacher (T-2 and T-5) who taught both bilingual and Anglo groups. However, all Anglo and bilingual teachers were videotaped as they taught 2 or 3 different reading groups within one language. To answer part 2 of the second question, the results of category usage by individual teacher can be examined (see Tables 2 and 3).

Each teacher used the questioning strategies in different percentages

with her different reading groups. The differences within one teacher's use of categories ranged from a high percentage for T-4 who showed a difference of 56% with Q-1 type of question to no difference for 3 teachers (T-5, T-10, T-11) with Q-5 type for the first two teachers and Column 7 for the last teacher. The percent of usage was low (2% and 6%) for these three teachers' use in general of these strategies.

Each bilingual and Anglo teacher who taught more than one reading group showed differences in usage for each group she taught. The greatest difference for each teacher will be reported in order from the greatest difference to the least difference. The specific category in which the difference occurred is also given (see Table 4).

The teacher who showed the least difference in strategies across reading groups was Anglo teacher T-10 who showed a combined one hundred points difference when each of the category differences was added together. The teacher who showed the greatest difference of category usage with her reading groups was Anglo teacher T-4 with one hundred seventy five points difference.

The one sample of a teacher who taught both bilingual and Anglo groups (T-2 and T-5) showed more differences between her 2 Anglo groups than between Anglo and bilingual. In D-3 style of directing questions, the difference between the 2 Anglo groups was 25%; between the bilingual group and 1 Anglo group it was 12%.

In categories D-1, D-4 and Q-4 results showed that the percent of use of these strategies was closer between one of the Anglo groups and the bilingual group than it was between the 2 Anglo groups.

Discussion

Results of the coding indicate that there were more differences of percent of usage within one teacher's use of categories than there were

TABLE 4

Greatest Difference in % of Category Usage Between Individual Teacher's Reading Groups

Teacher	% of Difference	Category in which Difference Occurred
T-4	56%	Q-1
T-9	52%	D-1
T-12	49%	Q-1
T-11	44%	D-2
T-1	40%	D-4
T-8	39%	D-1
T-3	29%	D-3
T-10	23%	D-1

differences between teachers of different language groups. The usage differences may have occurred for several reasons: the language background of students, the context of the reading lesson, the reading level of the specific reading group, or the number of students in the reading group.

Context of the reading lessons was not controlled within the study and each of the teachers was asked to procede as usual as the videotaping took place. This resulted in a variety of contexts for reading. Teachers' reading lessons consisted of activities that ranged in content from oral reading to learning how to look up words in the dictionary to working with synonyms and antonyms. Each different context could require different strategies. For example, questions that had to do with elaboration of personal experiences or making evaluations would not occur in a decoding skills practice lesson.

The reading level of the group may determine usage of strategies. If the group is less advanced in reading skills, the type of question would be more of the Absolute Factual sub category than either Factual or Evaluation. One teacher (T-4) in particular illustrated this. Although the reading group levels were not known by this investigator, it was evident that the teacher's first group was less advanced in reading than the second. The vocabulary and reading material used by the teacher was proof that there was a difference. In the first and lower group the teacher used Q-1 Absolute Factual 77% and Q-2 Factual which requires the student to figure out on his own, only 3%. With the second group the opposite strategy occurred. The Q-1 type was used 21% and Q-2 49%. Another teacher (T-12) exhibited a similar strategy with her reading groups, the first one being the higher group. Q-1 was used 16% and Q-2 used 57% for the higher group. With the lower group the teacher used Q-1 67% and Q-2 only 22%.

Among the bilingual teachers there were not as many differences with the types of questions used which may indicate that the reading levels of the children were not as different. One bilingual teacher (T-1) did show a difference of category usage between her two reading groups. There were only 3 bilingual teachers who taught at least 2 reading groups so there is not much data on which to make conclusions.

Another reason for the variety of questioning strategies may be due to the number of children in each group. The number ranged from 2 to 13. Three teachers (T-4, T-8, T-9) were taped with only 2 children in each group and one of these teachers, T-9, worked with 1 child for half of the videotape. Two teachers (T-11, T-12) were working with thirteen children each. The questioning style of directing questions could be effected by this situation of the number of children in the group.

In terms of the bilingual teacher who taught both Anglo and bilingual children (T_2 and T_5) there were more differences of category use between her 2 Anglo groups than there were between the Anglo groups and the bilingual group. There were 4 categories that were different between Anglo and bilingual: D-2, Q-2, Q-3, and Q-5. The direction of questions to anyone who wanted to answer may be a more confortable way for the bilingual children to answer questions. This strategy seems to be less threatening in nature. If the teachers' goal is to have the students respond, then the fact that any and/or all can answer in chorus like fashion seemed to encourage response. There was less Q-2 type questions used with the bilingual group (16% as opposed to and average of 36% with the Anglo). Factual (Q-2) questions that required more figuring out and more language might have been more difficult for the second language reader in first grade. Q-5 (Related to Instruction but not to Text) was used 15% with bilingual and

not at all with the Anglo group. Most of the Q-5 type used by this teacher centered on questions such as, "Would you like to take your book home?" Perhaps the teacher wanted to elicit as many verbal responses as possible from the children and used this type which is part of questioning style developed for the coding system.

SUGGESTIONS FOR FURTHER STUDY

There is much that can still be done with the present data collected through the use of the coding system. The lack of generalizations of strategies among teachers of the same language groups might be due to: the context of the reading group, the reading level of children and/or the number of pupils within the group, these are all areas that should be examined further. The coded videotaped question data could be analyzed with the 3 areas above. The videotapes would have to be viewed again to get the data and then analyze them with category usages.

Another way to use the coding system would be to select the teachers and control the context of the reading group by requesting the teachers to work with oral reading. This might eliminate some of the differences of reading context that resulted from this study. It must be noted however, that too much control of the study in this manner would reduce the naturalness of classroom research. This type of research is needed in the sense that this is where teaching occurs and it is important to find out what is actually happening in the classroom, the reading groups in particular.

There is a difference of opinion as to whether one videotape sample for each teacher is sufficient to determine questioning strategies, other strategies, or behaviors exhibited by teachers as they work in small reading groups. It is suggested that this coding system be used with another similar single videotape sample to further check the reliability of the coding system in addition to the use of only one videotape sample. It might be better to collect videotape data at least twice to get a better idea if the strategies that are being examined occur with some degree of regularity.

This study included only one sample of a bilingual teacher who taught both bilingual and monolingual children. It was suggested to use the coding system to examine questioning and teacher correction strategies during oral reading with both bilingual and monolingual students. To what extent does the bilingual teacher use second language techniques within the reading context.

Teacher corrections were not examined in particular in the present study, although an attempt was made to code this behavior. The same videotapes could be reexamined to look specifically at this behavior to identify the different strategies used to correct students' incorrect answers and/or oral reading.

To what extent do questioning strategies or teacher corrections correlate with reading gains in either first or second language? Although reading test data were collected on the students within this study, it was not the intent to compare the strategies with reading gains. That is another way to use the present data and see whether there are certain questioning strategies that occur more frequently with teachers whose students make greater gains in reading.

CONCLUSION

Only one definite conclusion can be drawn from this study. Classroom research, as opposed to experimental or laboratory research, is very difficult to conduct. The bilingual population represented in this study was quite transient which presented problems in collecting data. Bilingual Education as it is perceived at the local level varies in implementation. Some programs provide limited English speaking children with a bilingual classroom all day but they receive their second language reading instruction from another teacher. Other programs provide children with a half day program and the balance of the day is spent in the regular English speaking classroom. English reading instruction is sometimes given by the bilingual teacher who may be a native speaker of either Spanish or English, or it is given by a separate teacher who is a native speaker of English.

Varying conditions such as these made it more difficult to conduct accurate research. The type of Bilingual Education stressed in the United States is transitional in which the goal is to provide instruction in the native language only as long as it is necessary until the child can function successfuly within the English classroom. Classroom research with bilingual subjects should be conducted in spite of these drawbacks.

Tentative conclusions from this investigation can be made. The teachers' use of questioning strategies are not a result of language differences but seem to be more related to the context, reading levels, and the number of children in the reading group. Great differences in use of questioning strategies did not exist with the bilingual teacher who taught in English to both bilingual and monolingual children. In fact, there

were greater percentages of usage differences between the 2 monolingual groups than there were between either Anglo group and the bilingual group. It cannot be determined whether this same result would occur if the language were Spanish, although results of this study indicate that teacher questioning strategies may not differ if reading context, reading level and number in reading group were controlled. These three conditions may have more of an effect on teachers use of questioning strategies than language has.

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APPENDIX A

Descriptive Outline of Coding Instructions

T= teacher
S= student
?= question

Column 1 TAPE LOCATION

Column 2 DIRECTION OF ? 1-4

1 T names S before asking ?

- nods or gestures to S before asking
- may be a round-robin type of ? procedure at the table
- follow-up ? are included

ie. John, what is this word?
T nods to Angelica..Can you make a Sentence using the word "slide"

2 T asks ? and accepts answer from anyone (usually answer called out by one or several in chorus-like fashion)

ie. Where are we trying to go?
Do any of you have any money today?

3 T asks ? calls on VOLUNTEER

- watch tape closely if you cannot see, do not guess

4 T asks ? calls on SPECIFIC STUDENT by name or by gesture

- do not confuse with follow up ? which should take priority over this one.

ie. How old was Liz when the story took place...John?
How do we make the "h" sound...Armando?

Column 3 TYPE OF ? 1-8

1 ABSOLUTE FACTUAL

- Ans. requires specific information which is present for the S or is present in material that S has learned before.
- only one possible answer
- ans. usually is 1 or 2 words

ie. What is the letter's name?
What word is missing?
Would you please read this page, Jose?
Would you repeat that sentence?

2 FACTUAL

- ans. requires some figuring out
- more than one ans. is acceptable
- there is not an exact wording necessary

ie. What is a word that begins with "sl"?
What is the boy doing in this picture?
When can we use this "too"?

3 YES/NO or TWO CHOICE QUESTION
Do not confuse with (5 below); if ? relates to reading and the teacher is soliciting a specific ans...do not record here.

ie. Do we know the man's name?
Is a lemon yellow?
Is it a "p" or a "b"?

4 PERSONAL WITH TEXT

- ans. requires some elaboration of personal experience or observation.
- ans. requires S to put him/herself in the place of some character in story.
- usually occurs when S is reading a story.

ie. Have you ever gone camping with just your dad?
How would you feel if you had worked all night?

5 RELATED TO INSTRUCTION BUT NOT CONNECTED TO TEXT

- ? may be rhetorical in nature
- May be confused with YES/NO but if ans. is connected with reading in some way, it should be recorded here.

ie. What words will you practice over the weekend?
Would you like to take your book home this evening?
Who would like to read this page? (note: difference between this and..."Would you like to read this page?

6 NON ACADEMIC

- ans. requires nothing to do with instructional material
- usually of a personal, procedural or disciplinary nature

ie. How's your mother?
Now we know that isn't the way to act, right?
Who would like to get the pointer for me?

7 EVALUATION

- ans. requires inferences to be made
- more than text material is needed to ans.?

8 UNINTELLIGIBLE

- coder cannot determine the type because of audio problems.

Column 4 CONTENT OF ?

- use in conjunction with Column 3
- will not be used with every T's ?
- code when T's ? refer to the following:

A DECODING SKILLS

- include all ? that involve decoding of letter, sound, word recognition as well as vocabulary

B STORY DETAIL ?

- include all ? that ask specific ? about details in a story or sentence that S has read.

C STORY COMPREHENSION ?

- include all ? that involve making some kind of evaluation by the S

Column 5 T repeats or rephrases ? BEFORE calls on S or S has chance to ans.

Column 6 T asks 2 or more different ? before calls on S

Column 7 T stays with same S and asks more than 1 ? in attempt to elicit response

- check column for each question even if several occur in succession

Column 8 STUDENT RESPONSE

- watch for nods or actions
- even if you can't hear ans. if T's response gives a clue... record it
- include discipline type ? (Column 6) and if S responds to T.. record it

+ correct, partially correct, or self correction
- incorrect (teacher says "no" or moves on to another student for correct answer)
0 none (do not use when T asks more than 1 ? before S has opportunity to ans.)
A another S ans.

Column 9 TEACHER CORRECTIONS

- used most often with oral reading

1 - pronunciation
2 - grammar
3 - miscue during oral reading
4 - supplies correct ans.

APPENDIX B

VIDEOTAPE CODING SHEET

TEACHER _____

TAPE	DIRECT ? 1-4	TYPE ? 1-8	REPEATS ?	ASKS 2 OR MORE?	STAYS WITH S	SR	TC 1-4	TRANSCRIPTION	CONTEXT	COMMENTS
								TEACHERS' QUESTIONS	-brief description of lesson	personal observations as tapes were viewed.
									-name of book	
									-text pages	
									-worksheet	
									-flipchart	
									-chalkboard	
									-note each time lesson changes	